

WHAT IS CLAIMED IS:

1. An integrated material transport system for an integrated circuit manufacturing factory, the system comprising:
 - a first material transport subsystem traveling at a first height;
 - a second material transport subsystem traveling at a second height; and
 - at least one shared material transfer port to be used by both the first and second transport subsystems,wherein both the first and second material transport subsystems serviced by an integrated rail subsystem for exchanging predetermined materials through the shared material transfer port with a predetermined material stocker under a ceiling with a uniform height.
2. The system according to claim 1 wherein the first material transport subsystem is an intrabay material transport subsystem for providing material transfer within a production bay or between the production bay and the predetermined material stocker.
3. The system according to claim 2 wherein the predetermined material stocker is located between the production bay and a main corridor.
4. The system according to claims 1 wherein the second material transport subsystem is an interbay material transport subsystem for providing material transfer between the predetermined material stocker and at least one other material stocker.

5. The system according to claim 1 wherein the second material transport subsystem is located outside of a production bay and within a main corridor.

6. The system according to claim 1 wherein the material transfer port has an elongated opening for accommodating both the first material transport subsystem and the second material transport subsystem.

7. The system according to claim 1 wherein the material transfer port is located on a main corridor side of the predetermined material stocker.

8. The system according to claim 1 wherein the ceiling height is approximately 3 - 5 meters.

9. The system according to claim 1 wherein the integrated rail subsystem has two rails at different heights for servicing the first and second material transport subsystems simultaneously.

10. An integrated material transport system for an integrated circuit manufacturing factory, the system comprising:

a first material transport subsystem having at least one over head transport module traveling at a first height for providing material transfer within a production bay or between the production bay and the predetermined material stocker;

a second material transport subsystem having at least one over head shuttle traveling at a second height for providing material transfer between the

predetermined material stocker and at least one other material stocker;
at least one shared material transfer port to be used by both the first and second transport subsystems; and
an integrated rail subsystem servicing both the first and second material transport subsystems at the first and second heights for exchanging predetermined materials through the shared material transfer port with a predetermined material stocker so that the factory does not need different portions of its ceiling having different heights to accommodate the first and second material transport subsystems.

11. The system according to claim 10 wherein the material transfer port has an elongated opening for accommodating both the over head shuttle and the over head transport.

12. The system according to claim 10 wherein the material transfer port is located on a main corridor side of the predetermined material stocker.

13. The system according to claim 10 wherein the factory has a ceiling height of approximately 3 - 5 meters.

14. The system according to claim 10 wherein the integrated rail subsystem has two rails at different heights for servicing the first and second material transport subsystems simultaneously.

15. A method for integrating intrabay and interbay material transport

systems in an integrated circuit manufacturing factory, the method comprising:

providing a first material transport system;

providing a second material transport system; and

providing at least one shared material transfer port for both the first and second transport systems,

wherein an integrated rail section services both the first and second material transport systems for exchanging predetermined materials through the shared material transfer port with a predetermined material stocker under a ceiling with a uniform height.

16. The method according to claim 15 wherein the first material transport system is an intrabay material transport system for providing material transfer within a production bay or between the production bay and the predetermined material stocker.

17. The method according to claim 16 wherein the predetermined material stocker is located between the production bay and a main corridor.

18. The method according to claims 15 wherein the second material transport system is an interbay material transport system for providing material transfer between the predetermined material stocker and at least one other material stocker.

19. The method according to claim 15 wherein the second material transport system is located outside of a production bay and within a main corridor.

20. The method according to claim 15 wherein the material transfer port has a size sufficient to accommodate both the first material transport system and the second material transport system.

21. The method according to claim 15 wherein the material transfer port is located on a main corridor side of the predetermined material stocker.

22. The method according to claim 15 wherein the uniform ceiling height is approximately 3 - 5 meters.

23. The method according to claim 15 wherein the integrated rail section has two rail subsystems at different heights for servicing the first and second material transport systems simultaneously.